

BEST AVAILABLE COPY

WO 2005/000627

PCT/EP2004/006775

Claims

1. A child safety seat for use with a vehicle seat comprising
a cradle arranged for secure fitting to said vehicle seat, said cradle having a base
part and an upright support part;
a turntable, rotationally mounting to said base part of said cradle; and
a seat shell, mounting on said turntable such that the turntable and said seat shell
are rotatable in tandem relative to the cradle,
wherein said turntable also rotationally mounts to said upright support part of the
cradle.
2. A child safety seat according to claim 1, wherein the base part and upright
support part of the cradle form an assembly of separate parts.
3. A child safety seat according to claim 1, wherein the base part and upright
support part of the cradle are in the form an integral cradle.
4. A child safety seat according to any of claims 1 to 3, wherein the base part of
the cradle is provided with a cut-away portion for ready receipt of the turntable.
5. A child safety seat according to any of claims 1 to 4, wherein the rotational
mounting of the turntable to the cradle is by means of a spindle.
6. A child safety seat according to any of claims 1 to 5, wherein the seat shell
has the form of a 'sit up' seat.

7. A child safety seat according to any of claims 1 to 5, wherein the seat shell has the form of an infant carrier.
8. A child safety seat according to any of claims 1 to 7, wherein the seat shell mounts to the turntable for ready mounting and demounting.
9. A child safety seat according to claim 8, wherein the turntable is arranged for interchangeable mounting of seat shells in 'sit up' seat and infant carrier forms.
10. A child safety seat according to any of claims 1 to 9, wherein the turntable comprises an upright part arranged for rotational mounting to the upright support part of the cradle.
11. A child safety seat according to any of claims 1 to 10, wherein the turntable rotationally mounts to the upright support part of the cradle by means of a track and rail mounting.
12. A child safety seat according to claim 11, wherein a track is provided to said upright part of the turntable, the upright part of the cradle or to both; and a rail is provided to said track or tracks, thereby forming said track and rail mounting.
13. A child safety seat according to either of claims 11 or 12, wherein the track and rail mounting has curved form.
14. A child safety seat according to any of claims 11 to 13, wherein the rail defines an 'H form' profile and the track is provided with ledges for receipt of the legs of said 'H form' rail.
15. A child safety seat according to any of claims 1 to 14, wherein a base of the seat shell remains in close relationship to base part of the cradle during rotation of the seat shell.

16. A child safety seat according to any of claims 1 to 15, wherein one or more rollers are provided to the rotationally relating parts of either the cradle or turntable or both such as to provide rolling engagement there between.
17. A child safety seat according to claim 16, wherein said one or more rollers comprise or are coated with a friction-reducing material.
18. A child safety seat according to any of claims 1 to 17, wherein a reclining mechanism is provided to the turntable and /or the child safety seat shell and acts as a coupling therebetween.
19. A child safety seat according to claim 18, wherein the reclining mechanism is arranged such that when the turntable is rotated relative to the cradle, both the recline mechanism and seat shell rotate in tandem therewith.
20. A child safety seat according to any of claims 1 to 19, wherein a rotational lock is provided to prevent unintended rotation of the turntable relative to the cradle.
21. A child safety seat according to any of claims 1 to 19, wherein a uni-directional lock is provided to allow rotation of the turntable relative to the cradle in one rotational direction only.
22. A child safety seat according to any of claims 1 to 21, wherein the base part of the cradle is provided with one or more ISOFIX fittings.
23. A child safety seat according to any of claims 1 to 22, wherein the cradle is provided with a vehicle shoulder belt fitting for receipt of a vehicle shoulder belt; and two vehicle lap belt fittings for receipt of a vehicle lap belt.

24. A child safety seat according to claim 23, wherein the vehicle shoulder belt fitting locates centrally on the upright support part of the cradle.
25. A child safety seat according to either of claims 23 or 24, wherein the vehicle shoulder belt fitting is provided with a lock-off element that allows for ready passage of the vehicle shoulder belt in one direction only.
26. A child safety seat according to any of claims 23 to 25, wherein said vehicle lap belt fittings are provided at the base part of the cradle.
27. A child safety seat according to any of claims 1 to 26, wherein the cradle is provided with a seat belt tensioning means for tensioning a vehicle belt.
28. A child safety seat according to claim 27, wherein said seat belt tensioning means acts such as to alter the effective path of travel of the belt, thereby introducing tension.
29. A child safety seat according to either of claims 27 or 28, wherein the seat belt tensioning means comprises a drum provided with a slot for receipt of a vehicle seat belt; and a drum spindle, for rotationally mounting the drum to the cradle.
30. A child safety seat according to claim 29, wherein the cradle is further provided with rotational force means for transferring rotational force to the drum.
31. A child safety seat according to claim 30, wherein said rotational force means comprises an articulated system including one or more levers or pivots.
32. A child safety seat according to either of claims 27 or 28, wherein the seat belt tensioning means comprises a pair of jaws provided with contoured or toothed surfaces and hinged together by a hinge element, said hinged element including a belt-shaped slot for receipt of the vehicle seat belt.

33. A child safety seat shell and turntable assembly for use with a cradle arranged for secure fitting to a vehicle seat, said cradle having a base part and an upright support part, to form a child safety seat according to any of claims 1. to 32, the assembly comprising

a turntable, rotationally mountable to said base part of said cradle; and

a seat shell, mounting to said turntable such that the turntable and said seat shell are rotatable in tandem relative to the cradle,

wherein said turntable is also rotationally mountable to said upright support part of the cradle.

34. A cradle assembly arranged for use with the child safety seat and turntable assembly of claim 33, the cradle assembly comprising

a cradle arranged for secure fitting to said vehicle seat, said cradle having a base part and an upright support part;

said base part of said cradle arranged for rotational mounting of a turntable,

wherein said upright support part of the cradle is also arranged for rotational mounting of said turntable.

35. A cradle and turntable assembly for use with a seat shell to form a child safety seat according to any of claims 1 to 32, said cradle and turntable assembly comprising

a cradle arranged for secure fitting to said vehicle seat, said cradle having a base part and an upright support part;

a turntable, rotationally mounting to said base part of said cradle, and arranged for rotational mounting of said seat shell such that said turntable and the seat shell are rotatable in tandem relative to the cradle,

wherein said turntable also rotationally mounts to said upright support part of the cradle.

36. A vehicle seat assembly comprising

a vehicle seat; and

a child safety seat according to any of claims 1 to 32 fitting to said vehicle seat.